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1-2. Section 112

Applicants have deleted "about" to eliminate the objection of the Examiner.

3-6. Section 103 Rejections

The Examiner has rejected the claims under section 103 as unpatentable over Palmberg in view of Keshevan, Skidmore in view of Keshevan, and Isakov in view of Keshevan. For each of these rejections, the Examiner has cited a prior art carbide insert percussion bit that has different sized inserts, and then applies the teaching of Keshevan (or Hedlund) for the proposition that it would have been obvious to coat the inserts with diamond. Applicants have amended the independent claims of the application to recite that the first inserts are not superhard. The effect is to recite a bit that has a composite cutting structure: superhard inserts and non-superhard inserts, for example, conventional carbide inserts.

Fundamentally, applicants respectfully submit that it is not obvious to only apply diamond (or other superhard material) to some of the inserts on a percussion bit that are of a different size than other inserts that are not coated with diamond. The teachings of Keshevani is to have diamond on all of the inserts. There is no teaching to have diamond on some of the inserts and not others. The present invention customizes the diamond coatings to different inserts based on the different loading that such inserts receive. For example, in the illustrated embodiment, the gage inserts see a stronger rock and more abrasive action than the interior inserts. Therefore, these inserts optimally may be coated with diamond. Diamond coated inserts are expensive and therefore cost can be saved by not having the interior inserts diamond coated. Moreover, it may be advantageous to

have the interior inserts made from the relatively tougher tungsten carbide material while the outer inserts are made from the harder diamond material. This provides a composite cutting structure across the head of the bit that is not taught by the prior art. None of the references cited by the Examiner teach using different materials on the inserts. All three of the references teach using the same material for all the inserts of a percussion bit. The fact that Keshevan teaches using diamond does not provide a teaching that only some of the inserts of Palmberg, Skidmore, Isakov are to be diamond coated. In fact, each of the reference is consistent in teaching the same material for the inserts. To use different materials on the inserts would run counter to the teachings of these references. Therefore applicant respectfully submits that the cited references do not teach using different materials on the inserts of a percussion bit.

7. Specification

Applicants have corrected the typographical error in the patent number so that 4,819,739 now appears as the correct patent number for the Fuller patent.

8. Drawings

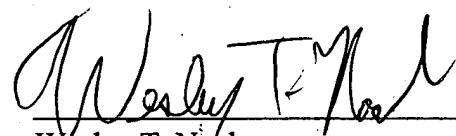
Applicants have discovered that the wrong figure sheets were submitted with the current application. Instead of submitting the same drawings that were filed with the provisional application, applicants mistakenly filed an earlier version of the drawings prior to the final drawings filed with the provisional application. Applicant respectfully requests substitution of the attached drawing sheets representing Figures 4-12. This submission does not add new matter as these are the identical figures filed with the

provisional application. Additionally, these drawings sheets obviate the Examiners objections to the drawings.

Conclusion:

In view of the foregoing amendments and comments, reconsideration of the claims and the allowance thereof is respectfully requested.

Respectfully Submitted,



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